3.0 ALTERNATIVES AND CUMULATIVE PROJECTS

3.1 FACTORS USED IN SELECTION OF ALTERNATIVES

3.1.1 Alternatives Development and Screening Process

One of the most important aspects of the environmental review process is the identification and assessment of reasonable alternatives that have the potential for avoiding or minimizing the impacts of a proposed Project. In addition to mandating consideration of the No Project Alternative, the State CEQA Guidelines (section 15126.6 (c) and (d)) emphasize the selection of a range of reasonable alternatives and an adequate assessment of these alternatives to allow for a comparative analysis for consideration by decision-makers.

The CEQA requires consideration of a range of reasonable alternatives to the Project or project location that: (1) could feasibly attain most of the basic project objectives; and (2) would avoid or substantially lessen any of the significant impacts of the proposed Project. An alternative cannot be eliminated simply because it is more costly or if it could impede the attainment of all Project objectives to some degree. However, the State CEQA Guidelines declare that an EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote or speculative. The CEQA requires that an EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed Project. The Guidelines (Section 15126.6(e)(2)) further state, in part, that "If the environmentally superior alternative is the "No Project" alternative, the EIR would also identify an environmentally superior alternative among the other alternatives."

This screening analysis does not focus on relative economic factors of the alternatives (as long as they are feasible) since the State CEQA Guidelines require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of Project objectives or would be more costly." Likewise, the question of market demand or Project need is not considered.

3.1.2 Alternatives Screening Methodology

Alternatives to the proposed Project were selected based on the information received from PG&E, the EIR study team, and the public and local jurisdictions during the EIR scoping period. The alternatives screening process consisted of three steps:

Step 1: Define the alternatives to allow comparative evaluation.

Step 2: Evaluate each alternative in consideration of one of more of the following criteria:

- The extent to which the alternative would accomplish most of the basic goals and objectives of the Project;
- The extent to which the alternative would avoid or lessen one or more of the identified significant environmental effects of the Project;
- The potential feasibility of the alternative, taking into account site suitability, economic viability, availability of infrastructure, General Plan consistency, and consistency with other applicable plans and regulatory limitations; and
- The requirement of the CEQA Guidelines to consider a "no project" alternative and to identify, under specific criteria, an "environmentally superior" alternative in addition to the "no project" alternative (CEQA Guidelines, section 15126.6(e)).

Step 3: Determine suitability of the proposed alternative for full analysis in the EIR. If the alternative is unsuitable, eliminate it from further consideration with appropriate justification.

Feasible alternatives that did not clearly offer the potential to reduce significant environmental impacts and infeasible alternatives were removed from further analysis. In the final phase of the screening analysis, the environmental advantages and disadvantages of the remaining alternatives were carefully weighed with respect to potential for overall environmental advantage, technical feasibility, and consistency with Project and public objectives.

If an alternative clearly does not provide any environmental advantages as compared to the proposed Project, it is eliminated from further consideration. At the screening stage, it is not possible to evaluate potential impacts of the alternatives or the proposed Project with absolute certainty. However, it is possible to identify elements of the proposed Project that are likely to be the sources of impact. A preliminary assessment of potential significant effects of the proposed Project resulted in identification of the following impacts:

- Water resources that could be degraded by pipeline construction;
- Biological resources (including listed wildlife and plant species) and sensitive habitats that could be affected by pipeline construction;
- Historical, cultural and paleontological resources along the proposed route;

- Geologic hazards, including strong seismic ground shaking and unstable soil units (including Impacts to levee stability and/or integrity);
- Noise disturbance to residents and nesting birds from construction activities;
- Recreation impacts to boaters on the Cosumnes River during bridge removal activities;
- Air Quality impacts from construction equipment emissions and pipeline blowdown;
- Traffic and Transportation impacts, including construction vehicles on local roads and disruption of traffic flows and emergency access during pipeline trenching; and
- Hazards, including risk of serious injuries and fatalities due to pipeline rupture and explosion or fire from structural failure, corrosion, or inadvertent damage.

For the screening analysis, the technical and regulatory feasibility of various potential alternatives were assessed at a general level. The assessment of feasibility was approached using reverse reason; that is, an attempt was made to identify anything about the alternative that would be infeasible on a technical or regulatory basis. The CEQA does not require elimination of a potential alternative based on cost of construction and operation/maintenance. For the proposed Project, the primary technical and regulatory issues that could make an alternative infeasible relate to:

- Disturbance to wetland resources, particularly in areas under a conservation easement;
- Availability of space in roads and railroad or utility corridors and the likelihood of obtaining a right-of-way easement from these owners; and
- The likelihood of obtaining right-of-way easements on private lands.

3.1.3 Summary of Screening Results

Potential alternatives were reviewed against the above criteria. A number of alternative routes were eliminated based on the infeasibility of constructing and operating a pipeline along them. Those alternatives that were found to be technically feasible and consistent with PG&E's objectives were reviewed to determine if the alternative had the potential to reduce the environmental impacts of the proposed Project.

Table 3.1-1 represents the evaluation and selection of potential alternatives to be addressed in the EIR. Those listed in the first column have been eliminated from further

consideration (see rationale in Section 3.2), and those in the second column are described in Section 3.3 and are evaluated in detail in Section 4.0.

Table 3.1-1. Summary of Alternative Screening Results

Alternatives Eliminated from Consideration	Alternatives Evaluated in this EIR
Franklin Boulevard Alternative	No Project Alternative
Remove and Replace the Existing Line 108 Pipeline Alternative	Franklin 1 Alternative
Line 172/DFM Alternative	Franklin 2 Alternative
	Project without Bridge Replacement

3.2 ALTERNATIVES ELIMINATED FROM FULL EVALUATION

Three preliminary alternative routes were evaluated for consistency with the Project objective of expanding the capacity of the existing transmission system to meet the demand for natural gas due to the extensive residential growth in the Sacramento area. The following preliminary alternatives were initially considered but rejected for various reasons stated below.

3.2.1 Franklin Boulevard Alternative

Description

The Franklin Boulevard Alternative would involve construction of the Line 108 pipeline in Franklin Boulevard (Figure 3.2-1). From Thornton Station, the route would travel west across agricultural fields to Thornton Boulevard. At Thornton Boulevard, the route would proceed north crossing the Cosumnes River Preserve. At this point, Thornton Boulevard becomes Franklin Boulevard. The route would continue north along Franklin Boulevard to Elk Grove Boulevard. At Elk Grove Boulevard, the route would head directly west to Elk Grove Station.

Rationale for Elimination

This alternative would have the same level of impact on water resources as the proposed Project, as it would require HDDs to cross any waterways. The potential impact on biological resources would likely be greater than for the proposed Project because of the adjacent wetland habitat south of Desmond Road. In addition, a portion of Franklin Boulevard is elevated on a concrete causeway which would make trenching in that section of the roadway infeasible. To construct the pipeline in that section,

Insert Figure 3.2-1 (8.5 x 11 color)

PG&E would have to leave the roadway with the pipeline and install it by HDD under the Cosumnes River. However, in so doing, the bore pits and lay down areas would directly impact more acres of wetland and Giant Garter Snake habitat than would the proposed Project. Impacts associated with cultural and paleontological resources and geologic hazards were considered to be equivalent to the proposed Project. However, construction impacts associated with this alternative would be much greater. Because it would be constructed within Franklin Boulevard, the proposed Project would require at least one lane of the road to be closed. This would result in greater impacts to transportation and air quality, because re-routing traffic along the entire project alignment/roadway would increase traffic delays, and would also likely result in a longer period of construction. Also, risk from upset would be substantially greater for this alternative compared to the proposed Project because this alternative would place a greater portion of the pipeline within roadways. This would result in a greater likelihood of inadvertent damage from future excavation in the utility right of way, and would potentially expose more individuals to risk of serious injury should a pipeline failure occur. Because of the potential significant impacts related to construction and risk of upset, this alternative was eliminated from further analysis and consideration.

3.2.2 Remove and Replace the Existing Line 108 Pipeline

Description

The Remove and Replace the Existing Line 108 Pipeline Alternative would follow the existing Line 108 pipeline (Figure 3.2-2). From Thornton Station, Line 108 travels north along the east side of the Union Pacific Railroad (UPRR) tracks to Lambert Road. At Lambert Road, the pipeline heads west under the UPRR tracks to Franklin Boulevard. The route then heads north along the west side of Franklin Boulevard to approximately 1,000 feet south of Point Pleasant Road. At this point, the pipeline aligns with the west side of the UPRR tracks, and continues north to a farm road approximately 2,600 feet south of Bilby Road. The pipeline then heads east under the UPRR and follows the east side of the tracks and Willard Parkway until the intersection of Willard Parkway, Franklin Boulevard and the UPRR. At this point the pipeline heads west under the UPRR tracks and follows the railroad tracks on the west side, heading north to the Elk Grove Station.

Reason for Elimination

This alternative would require excavation of the entire pipeline to remove the existing Line 108 pipeline. While it would likely not require excavation in and across the

Insert Figure 3.2-2 (8.5 x 11 color)

Mokelumne and Cosumnes Rivers, it would require excavation within the Stone Lakes National Wildlife Refuge and Cosumnes River Preserve which would result in substantial impacts to wetland resources and special status species habitat when compared to the proposed Project. Further, features such as roads and utilities have been constructed over the existing pipeline and could not be removed in order to remove the pipeline. For these reasons, this alternative was eliminated from further analysis.

3.2.3 Line 172/DFM Alternative

Description

An alternative to re-connecting the Thornton and Elk Grove Stations would be to install parallel pipeline capacity to Line 172 from the north, and to the Mather Distribution Feeder Main (DFM) that serves Rancho Cordova and Folsom (Figure 3.2-3). The Line 172 parallel would be 13.5 miles of 24-inch diameter pipeline, constructed approximately along the Southern Pacific Railroad, from the intersection of County Roads 97 and 16 in northern Yolo County, to just south of the Yolo County line. Construction would occur in a rural area, primarily through agricultural fields but would require crossing some waterways including natural drainages and irrigation canals.

This design would also require additional parallel pipeline capacity be installed to the Mather DFM serving Rancho Cordova and Folsom. This would require a 1.35-mile, 12-inch diameter pipe along Routier Road from Old Placerville Road to Folsom Boulevard in the community of Rosemont and a 3.2-mile 12-inch diameter pipeline along Folsom Boulevard from Sunrise Boulevard to Hazel Avenue in the City of Rancho Cordova.

Reason for Elimination

While this alternative would meet the primary objective of providing gas distribution to growing areas of Sacramento County, it would not provide a looped system which is required to increase the level of service reliability to customers in south Sacramento. Construction of this alternative would require more pipeline construction, 18 miles compared to 11 miles with the proposed Project, and would occur in developed suburban communities. This would likely result in substantially greater construction impacts (traffic, noise, and air quality). These impacts would also affect more people than the proposed Project because portions of this alternative would be constructed through the suburban communities of Rancho Cordova and Rosemont. The potential

Insert Figure 3.2-3 (8.5 x 11 color)

for biological impacts would likely be slightly lower than compared to the proposed Project, as this alternative would not cross any preserve areas or major waterways. While this alternative would meet most project objectives, it would not create a looped system and so would fail to meet the project objective for increasing the level of service reliability. Because this alternative would not improve the level of service reliability, and would result in greater construction impacts, it was eliminated from further analysis.

No other alternative locations were identified for consideration for this EIR analysis. In order for an alternative location to attain most of the basic project objectives, it must be able to provide an increased supply of natural gas to the greater Sacramento region. Alternative locations would therefore have to originate where there is adequate gas supply and terminate where PG&E can distribute that gas to meet their existing and anticipated customer demand; locating the entire Project outside the Sacramento region would not meet any of the basic project objectives. Originating locations outside the immediate area of the proposed Project would require much longer pipeline distances to connect with the local distribution system. Depending upon the exact alignment, these longer distances would be likely to have greater construction-related impacts (e.g., biological resources, air quality, traffic, and noise) and would result in a greater risk of upset than the proposed Project. Alternative locations that would require longer pipeline distances would therefore not provide any environmental advantages as compared to the proposed Project, and so were not considered further.

3.3 ALTERNATIVES EVALUATED IN EIR

3.3.1 No Project Alternative

Description

The No Project Alternative would not result in the construction and operation of a natural gas pipeline between the Elk Grove and Thornton Stations by the January, 2009, winter season. This could result in emergency curtailment, or interruption of services to approximately 160,000 residential and small commercial gas accounts under Abnormal Peak Day (APD) design condition.[1] The active segment of the existing Line 108 pipeline would continue to provide distribution services to local landowners. No impacts on air quality, biological resources, cultural resources, geology and soils,

[1] An APD is the design criteria used for maintaining reliable service to core customers after all non-core customers have been curtailed. The APD occurs at local temperatures which have a recurrence interval of about 1 in 90 years.

hazards and hazardous materials, noise, and transportation would occur under the No Project Alternative.

This alternative would not meet the objectives of the proposed Project. Specifically this means that PG&E would not attain needed system flexibility and additional capacity for the Sacramento Local Transmission System. The No Project Alternative is further analyzed in Section 4.0, Environmental Analysis.

Required Agency Approvals

No agency approvals would be required under the No Project Alternative.

3.3.2 Route Variations

Two route variations were evaluated with respect to feasibility and impacts for the northern portion of the pipeline route, from a point approximately 2,600 feet south of Bilby Road, north to the west side of Franklin Boulevard where the existing Line 108 crosses Franklin Boulevard and the UPRR. These are referred to as the Franklin 1 and Franklin 2 Alternatives and are illustrated on Figure 3.3-1. For comparison, the proposed Project alignment for this section of the pipeline can be seen on Figure 2.1-7 in Section 2, Project Description. Except for the alignment differences shown on Figure 3.3-1, the rest of the pipeline alignment for the Franklin 1 and Franklin 2 alternatives would be the same as for the proposed Project.

Franklin 1 Alternative

From the starting point, approximately 2,600 feet south of Bilby Road, this alternative would turn east to the east side of the UPRR and follow PG&E's existing easement. This alternative route would then continue north, veering east around a UPRR property, and trenching through Bilby Road. North of Bilby Road, this alternative would turn west and continue to the UPRR tracks at a point just south of an unnamed slough. This slough, the UPRR, and Franklin Boulevard would be crossed using HDD construction technology, to the west side of Franklin Boulevard. This HDD would be constructed approximately 35 feet below the features to be crossed. This alternative would not differ substantially in length compared to the proposed Project (approximately 58,270 feet).

The Franklin 1 alternative would require an HDD pullback area of approximately 2.51 acres and would cross two vernal pools on the Stone Lakes National Wildlife Refuge. While no trenching would occur, this area would be subject to surface disturbances in an area under a conservation easement established to protect this habitat. No HDD

Insert Figure 3.3-1 (8.5x11 color)

pullback area would be required on the Stone Lakes National Wildlife Refuge under the proposed Project. This alternative would require construction across Bilby Road, east of the proposed route and the UPRR. This trenching would likely require temporary lane closures and traffic control, but this construction impact would be of shorter duration than for the proposed Project which would require trenching approximately 2,600 feet adjacent to Bilby Road and Franklin Boulevard.

Franklin 2 Alternative

From the starting point, approximately 2,600 feet south of Bilby Road, this alternative would continue north on the west side of the UPRR and would trench across Bilby Road. This alternative would continue north to a point south of the unnamed slough and then be installed via HDD technique west under the slough and Franklin Boulevard. This HDD would be constructed approximately 35 feet below the features to be crossed. This alternative would be the shortest of the alternatives, including the proposed Project.

The Franklin 2 alternative would require an HDD pullback area of approximately 2.51 acres and would cross two vernal pools on the Stone Lakes National Wildlife Refuge. While no trenching would occur, this area would be subject to surface disturbances in an area under a conservation easement established to protect this habitat. No HDD pullback area would be required on the Stone Lakes National Wildlife Refuge under the proposed Project.

This alternative would require trenching across Bilby Road, just west of the UPRR and east of the proposed route. This trenching would likely require temporary lane closures and traffic control, but this construction impact would be of shorter duration than for the proposed Project which would require trenching approximately 2,600 feet adjacent to Bilby Road and Franklin Boulevard.

Required Agency Approvals

The required agency permits and approvals for the Franklin 1 and Franklin 2 route variations would be the same as for the proposed Project.

Reason for Consideration

The Franklin 1 and Franklin 2 route alternatives meet all of the basic project objectives, would eliminate the potential construction noise and traffic impacts associated with

approximately 2,600 feet of trenching along Bilby Road and Franklin Boulevard, and would eliminate the entry and exit pits in Franklin Boulevard (one on each side of the unnamed slough) that would be required for the proposed Project. Also, by moving this section of the pipeline out of the roadways and away from the residential area at the corner of Bilby Road and Franklin Boulevard, these two alternatives would likely reduce the risk of serious injury from a pipeline upset. Each of these two alternatives would have potentially greater impacts to biological resources compared to the proposed Project because of the required pullback area in the Stone Lakes National Wildlife Refuge. However, the potential reduction in noise, traffic, and risk of upset warrants their consideration in the EIR analysis.

3.3.3 Project without Bridge Removal

The 630-foot suspension bridge that once supported the Line 108 natural gas pipeline across the Cosumnes River may represent a significant historic resource. The Project without Bridge Removal alternative would result in construction of the proposed Project but would leave the suspension bridge intact. Since the suspension bridge has no function in the proposed Project, this alternative would not affect any pipeline construction activities.

Required Agency Approvals

The required agency permits and approvals for the Project without Bridge Removal alternative would be the same as for the proposed Project except that the BLM's approval for removal of the bridge would not be required.

Reason for Consideration

The Project without Bridge Removal alternative would meet all of the basic project objectives and would avoid the permanent removal of a potentially historic structure. The construction disturbance associated with removal of the bridge and the north pier and anchor block would be avoided, as would potential construction interference with recreational uses of that portion of the Cosumnes River. For these reasons, the Project without Bridge Removal alternative was retained for consideration in the EIR.

3.4 CUMULATIVE RELATED FUTURE PROJECTS

This discussion provides a listing and map identifying other related future projects near the location of the proposed Project and alternatives.

Section 15130 of the CEQA Guidelines requires that an EIR discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as defined in section 15065(c). Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable. As defined in Section 15355 of the CEQA Guidelines, a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.

3.4.1 Boundary of Cumulative Projects Study Area

The Cumulative Projects Study Area is defined as the area within an approximately one-mile-wide corridor centered on the proposed pipeline (0.5 miles on each side of the alignment) as shown in Figure 3.4-1. This is the area within which the proposed Project's impacts could combine with impacts from other projects and be cumulatively considerable, except for air quality impacts which tend to be considered as regional impacts. Exceptions are associated with other PG&E natural gas pipeline projects, shown on Figure 3.4-2, which are considered out to a distance of 5 miles from the proposed Project. These projects could affect the operations of the proposed Project.

3.4.2 Description of Cumulative Projects

Cumulative projects considered in this analysis to potentially contribute to cumulative impacts for the PG&E Line 108 Natural Gas Pipeline Project are those that are within the defined study area in Sacramento County, San Joaquin County, and the City of Elk Grove, and include:

- Approved projects that have not yet been constructed;
- Projects that are currently under construction;
- Projects requiring an agency approval for an application that has been received at the time the Notice of Preparation was released;
- Projects that have been budgeted, planned, or included as a later phase of a previously approved project;

- Projects beyond the study area perimeter that could potentially affect regional resources (e.g., air quality); and

- Probable future projects that are determined to be reasonably foreseeable for other reasons.

Table 3.4-1 summarizes the specific projects considered in the cumulative scenario, and the locations of these projects are illustrated on Figures 3.4-1 and 3.4-2. These projects are also described briefly below.

Sacramento County

The Sacramento County Airport System is currently developing a Master Plan for the Franklin Field Airport to guide development at the airport over the next 20 years. The Federal Aviation Administration is scheduled to review the Plan during the last quarter of 2007 (Sacramento County Airport System 2007). Franklin Field Airport is approximately one-quarter mile to the east of the proposed Project.

San Joaquin County

There are no cumulative projects applicable to the proposed Project within unincorporated San Joaquin County (San Joaquin County 2007).

City of Elk Grove

- Franklin Crossing Project - This project proposes a tentative subdivision map, rezoning, and a specific plan amendment to create 233 single family lots within the southwest corner of the East Franklin Specific Plan area. The Franklin Crossing Project site is bounded by Bilby Road and residential uses to the north, the UPRR tracks to the west, and undeveloped agricultural land to the east and south (City of Elk Grove 2007a and 2007b). The site is approximately 150 to 400 feet east of the proposed Project alignment.

- Franklin Boulevard/Elk Grove Boulevard Intersection Project - This project would result in improvements to the Franklin Boulevard and Elk Grove Boulevard intersection. Funds have not yet been identified for this project and it has not yet gone through the CEQA process. If funds become available, construction of the project could begin as early as the summer of 2008 (City of Elk Grove 2007c).

Insert Figure 3.4-1 (11”x17”)

1 back of Figure 3.4-1

Insert Figure 3.4-2 (8.5x11 color)

Table 3.4-1. Recently Constructed or Proposed Projects with the Potential to Cumulatively Affect Resources of Concern for the PG&E Line 108 Natural Gas Pipeline Project

Location on Map (Figures 3.4-1 and 3.4-2)	Project	Description	Location	Status/Schedule
1	Franklin Field Airport Master Plan	The Master Plan is being developed to guide development at the airport over the next 20 years.	Approximately one-quarter mile to the east of the proposed Project.	Master Plan is currently in development.
2	Franklin Crossing Project	Tentative subdivision map, rezoning, and a specific plan amendment to create 240 single family lots within the East Franklin Specific Plan area.	Approximately 150 to 400 feet east of the proposed Project alignment, south of Bilby Road.	City Council approved the Project on July 11, 2007. The City anticipates that construction of the project may begin in November 2007.
3	Franklin Boulevard/Elk Grove Boulevard Intersection Project	Improvements to the Franklin Boulevard and Elk Grove Boulevard intersection.	Approximately 0.25 of a mile east of the proposed Project alignment.	Unknown. If funding for the project is secured, it may be constructed as early as the summer of 2008.
4	11,000-foot, 10-inch natural gas pipeline and new regulator station	Installed an 11,000-foot, 10-inch natural gas pipeline and new regulator station to extend the Bond Road Distribution Feeder Main.	The pipeline extension is approximately 3.5 miles northeast of the Elk Grove Station.	This project became operational in September, 2006
5	3,400-foot, 10-inch natural gas pipeline	Installed a 3,400-foot, 10-inch natural, gas pipeline to parallel the Bond Road Distribution Feeder Main.	The new pipeline would be approximately 2.5 miles north of the Elk Grove Station.	This project would become operational in 2007.
6	Up-rate the Pressure of the Line 108 Pipeline	Increase the pressure rating of the Line 108 Pipeline from 412 psig to 490 psig between Las Vinas and Thornton Stations.	South of the Thornton Station.	This project would become operational in 2009.

Sources: PG&E 2007; Sacramento County Airport System 2007 and 2005; and City of Elk Grove 2007a, 2007b, and 2007c.

Pacific Gas and Electric

- Installed an 11,000-foot, 10-inch natural gas pipeline and new regulator station to extend the Bond Road Distribution Feeder Main. The pipeline extension is approximately 3.5 miles northeast of the Elk Grove Station. This project became operational in September, 2006 (PG&E 2007).

- Installed a 3,400-foot, 10-inch natural, gas pipeline to parallel the Bond Road Distribution Feeder Main. The new pipeline would be approximately 2.5 miles north of the Elk Grove Station. This project would become operational in 2007 (PG&E 2007).

- Increase the pressure rating[2] of the Line 108 pipeline from 412 psig to 490 psig between Las Vinas and Thornton Stations. This project would become operational in 2009 (PG&E 2007).

3.4.3 Description of Cumulative Environment

Cumulative environmental impacts associated with the proposed Project and those projects outlined in Table 3.4-1 are analyzed separately for each resource area in Section 4.0, Environmental Analysis. Those sections consider construction and operational impacts associated with the proposed Project with respect to other planned or recently completed projects in the area, as well as existing conditions in the area.

Provided below are brief descriptions of the cumulative environment for those resource areas having the greatest potential for cumulative impacts. More detailed descriptions of the environmental setting for each resource area are provided in Section 4.0, Environmental Analysis.

Air Quality

The air quality cumulative environment is southern Sacramento Valley, which is under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD) and the San Joaquin Valley Air Pollution Control District (SJVAPCD). The U.S. Environmental Protection Agency has designated Sacramento and San Joaquin Counties as a nonattainment area for the Federal eight-hour ozone standard. The

[2] Increasing the rating of the pipeline may include replacing valves and regulators, inspection of the pipeline with a “smart” pig, and hydrostatic testing of the pipeline to document its ability to handle the increased operating pressure. In some instances, repair or replacement of some pipeline sections may be necessary, but this would not be known until the pipeline is inspected.

Counties are also in nonattainment of the State one-hour and eight-hour ozone standards. Through control measures adopted by State, local and Federal agencies, both Sacramento and San Joaquin Counties have attained the California and Federal carbon monoxide (CO) standards. However, the potential still exists for incidents of high localized concentrations of CO. Sacramento and San Joaquin Counties are in nonattainment status for the Federal particulate matter (PM_{10}) standards, the more stringent State PM_{10} standards, and the State annual $PM_{2.5}$ standard. These criteria air pollutants are discussed in greater detail in Section 4.6, Air Quality.

Under AB 32, California's Global Warming Solutions Act, the California Air Resources Board (CARB) is required to adopt, by January 1, 2008, a statewide greenhouse gas (GHG) emissions limit equivalent to the statewide greenhouse gas emissions levels in 1990, which must be achieved by 2020. By January 1, 2011, the CARB is required to adopt rules and regulations that shall become operative January 1, 2012, to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 also requires the CARB to monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions reduction measure, or market-based compliance mechanism that it adopts. The SMAQMD and SJVAPCD currently do not provide any guidance on assessing the cumulative environment relative to GHG emissions.

Biological Resources

The cumulative environment for biological resources includes Sacramento and San Joaquin Counties. Habitats affected by the proposed Project and other cumulative projects include: agricultural lands, annual grassland, ruderal communities, and wetland communities including vernal pools, seasonal wetlands, freshwater emergent marsh, irrigation ditches, riparian woodland and riverine communities. These habitats provide suitable habitat for special status plants and wildlife.

Cultural Resources

The cumulative environment for cultural resources considers a broad cultural and regional system of which the local resources are a part. The cumulative context for the cultural resource analysis for the proposed Project includes Sacramento and San Joaquin Counties. Development in these counties is assumed to include thousands of acres of land.

Geology, Soils, Mineral and Paleontological Resources

The cumulative environment for geology, soils, and mineral resources consists of relatively flat, level topography along major transportation routes and in areas with agricultural land uses and conservation land. Existing grades from road and railroad structures extend above the level agricultural fields. Geologic mapping reveals that the cumulative environment is underlain by Quaternary alluvial deposits consisting of channel and basin deposits generally.[3] Additionally in the proposed Project vicinity, man-made levees have been constructed for flood control purposes. The cumulative environment lies within Seismic Zone 3, per the 2000 California Building Code, and is not located within an Alquist-Priolo Earthquake Fault Zone.[4] Further, no active fault zones or shear zones are known to cross the cumulative environment.

The geographic context for the analysis of impacts resulting from geologic hazards generally is site-specific, rather than cumulative in nature, because each project site has a different set of geologic considerations that would be subject to uniform site development and construction standards.

The cumulative environment for paleontological resources considers a broad regional system of which the local resources are a part. The cumulative context for the paleontological resources analysis for the proposed Project includes Sacramento and San Joaquin Counties. Development in these counties is assumed to include thousands of acres of land.

Hazards and Hazardous Materials

The cumulative context for hazards and hazardous materials use would be Sacramento and San Joaquin Counties. Pursuant to Government Code Section 65962.5, a database search was conducted in order to identify known areas containing hazardous materials within the proposed Project area. A review of these databases identified two sites that are within the one-mile-wide corridor centered on the proposed replacement pipeline.

[3] Terracon, *Geotechnical Engineering Report, Proposed 24-inch Diameter PG&E 108 Gas Line Extension, Thornton to Elk Grove, California*, February 22, 2006, page 6.

[4] Terracon, *Geotechnical Engineering Report, Proposed 24-inch Diameter PG&E 108 Gas Line Extension, Thornton to Elk Grove, California*, February 22, 2006, page 7.

Noise

The proposed Project would be constructed primarily through rural agricultural areas. Residential subdivisions have been recently constructed in the City of Elk Grove, east of the proposed Project. Sensitive noise receptors within the cumulative environment include rural residences, residential subdivisions, and the Franklin Elementary School.

Traffic and Transportation

The access routes to be used during construction of the proposed Project consist of an interstate freeway, a State highway, a county highway, local county-maintained roads, and private roads. Franklin Field, a public use airport owned and operated by the County of Sacramento, is located approximately one-quarter mile east of the proposed pipeline alignment in South Sacramento County. The following roadways are identified as access routes to the proposed Project alignment: Interstate 5, Highway 99, Franklin Boulevard/Thornton Boulevard, Hood Franklin Road, Twin Cities Road, and Lambert Road. In addition to these roads, the cumulative environment would also include the following: Desmond Road, Dierssen Road, Point Pleasant Road, Core Road, Bilby Road, and Willard Parkway.